JAPANESE PATENT APPLICATION, FIRST PUBLICATION NO. H7-258028

INT. CL.*: A61K 7/02 PUBLICATION DATE: October 9, 1995

TITLE: Makeup Cosmetic Composition.

APPLICATION NO.: H6-71495

FILING DATE: March 16, 1994

APPLICANT(S): KK SHISEIDO

INVENTOR(S): Masayuki NAGANUMA and Shigenori KUMAGAYA

ABSTRACT

OBJECT - To offer a makeup cosmetic composition with a high oil content, which does not have oiliness or stickiness when applied to the skin, and does not clump together over time.

CONSTITUTION - An organopolysiloxane elastomer spheroidal powder with an average particle size of 1.0-15.0 μm and a non-porous spheroidal silica with an average particle size of 1.0-15.0 μm are combined in the form of a powder.

CLAIMS

1. A makeup cosmetic composition characterized by containing an organopolysiloxane elastomer spheroidal powder with an average particle size of 1.0-15.0μm, a non-porous spheroidal silica with an average particle size of 1.0-15.0 μm, and an oil.

2. A makeup cosmetic composition as recited in claim 1, wherein the content of the organopolysiloxane elastomer spheroidal powder with an average particle size of 1.0-15.0μm is 1.0-30.0 wt% and the content of the non-porous spheroidal silica with an average particle size of 1.0-15.0 μm is 5.0-30.0 wt%, and the content of the oil is 40.0-70.0 wt%.

3. A makeup cosmetic composition as recited in claim 2, wherein the content of the organopolysiloxane elastomer spheroidal powder with an average particle size of 1.0-15.0μm is 2.0-20.0 wt% and the content of the non-porous spheroidal silica with an average particle size of

1.0-15.0 μm is 10.0-25.0 wt%, and the content of the oil is 45.0-65.0 wt%.

DETAILED DESCRIPTION OF THE INVENTION

FIELD OF INDUSTRIAL APPLICATION

The present invention relates to a makeup cosmetic composition, and more specifically relates to a makeup cosmetic composition which does not form clouds of powder or clump together over time, and has a pleasantly dry sensation of use.

CONVENTIONAL ART AND PROBLEMS TO BE SOLVED BY THE INVENTION

Makeup cosmetic compositions come in various formats combining a powder and an oil, such as solid foundations, solid eyeshadows, oil-based foundations and lip rouges. Additionally, there are emulsified foundations based on emulsions, but they all contain large amounts of inorganic pigment powders such as talc, kaolin, iron oxide, titanium and mica-type pearl pigments, and organic pigments such as nylon, cellulose and tar pigments. These makeup cosmetic compositions usually contain up to 50 wt% of oils in order to prevent powderiness and proffer a moist sensation.

For example, while foundations are normally in a solid powder form with an oil part of 20 wt% or less, these types of solid powder foundations are problematic in that the powderiness can cause clouds of powder to form during the makeup process, thus soiling the container or clothes. Additionally, in oily foundations containing large amounts of oil, there is no such powder clouding, but there is an oily, sticky feeling which is not pleasant with regard to use, and a clumping effect can be observed over time.

On the other hand, organopolysiloxane elastomer spheroidal powders with an average particle size of 1.0-15.0μm have a silky sensation when rubbed, and have been recently developed as powders for cosmetic use which do not cause discomfort or irritation to the skin (JP-A H2-243612, JP-B H4-17162, JP-B H4-66446), but while their application to various products has been anticipated due to their favorable properties, their development has been left as a problem to be considered in the future. The present invention has been made in view of these conventional considerations, and has the object of offering a makeup cosmetic composition having a silky, soft and dry sensation of use.

MEANS FOR SOLVING THE PROBLEMS

The present invention is a makeup cosmetic composition characterized by containing an organopolysiloxane elastomer spheroidal powder with an average particle size of 1.0-15.0μm, a non-porous spheroidal silica with an average particle size of 1.0-15.0 μm, and an oil.

Next, the constitution of the present invention shall be explained. The organopolysiloxane elastomer spheroidal powder with an average particle size of 1.0-15.0 μm used in the present invention makes the texture of the makeup cosmetic composition smooth when rubbed on the skin, and is necessary to improve the properties of use such as the lightness of spreading.

dryness and softness.

The type of the hardened organopolysiloxane composition used as the raw material for the organopolysiloxane elastomer spheroidal powder is not particularly restricted, and examples include an addition-reaction-hardened organopolysiloxane composition obtained by hardening an organopolysiloxane containing a silicon atom-bound hydrogen atom with an organopolysiloxane with a silicon atom-bound vinyl group by an addition reaction in the presence of a platinum-based catalyst; a condensation-reaction-hardened organopolysiloxane composition obtained by hardening a diorganopolysiloxane with a hydroxy group at both ends of the molecular chain and a diorganopolysiloxane with a silicon atom-bound hydrogen atom by means of a dehydrogenation reaction in the presence of an organic tin compound; a condensation-reaction-hardened organopolysiloxane composition obtained by hardening a diorganopolysiloxane with a hydroxy group at both ends of the molecular chain and an hydrolyzed organosilane in the presence of an organic tin compound or titanic acid ester (here, examples of condensation reactions include dehydration, dealcoholization, deoximation, deamination, deamidation, decarboxylation and deketonization); a peroxide-hardened organopolysiloxane elastomer composition thermally hardened by an organic peroxide catalyst; and a high energy beam-hardened organopolysiloxane composition hardened by irradiation with γ-rays, UV rays or electron beams. Preferably, an addition-reaction-hardened organopolysiloxane composition is used for the quick hardening speed and the high level of uniformity of hardening. Particularly preferable among such addition-reaction-hardened organopolysiloxane compositions are (A) organopolysiloxanes having at least 2 lower alkenyl groups in each molecule, (B) organopolysiloxanes having at least two silicon atom-bound hydrogen atoms in each molecule, and (C) those formed by a platinum-based catalyst.

Examples of other organic groups that can be bound to the silicon atoms of the organopolysiloxanes which form the main agent in the above-described hardened organopolysiloxane compositions include alkyl groups such as methyl groups, ethyl groups, propyl groups, butyl groups and octyl groups; substituted alkyl groups such as 2-phenylethyl groups, 2-phenylpropyl groups, 3,3,3-trifluoropropyl groups; aryl groups such as phenyl groups, tolyl groups and xylyl groups and substituted monovalent hydrocarbon groups carrying epoxy groups, carboxylic acid ester groups, mercapto groups or the like. The organopolysiloxane elastomer spheroidal powder can be obtained by a method of mixing an addition-reaction-hardened, condensation-reaction-hardened or peroxidation-hardened organopolysiloxane composition as described above with water in the presence of a surfactant such as a non-ionic surfactant, an anionic surfactant, a cationic surfactant or an amphoteric surfactant, blending uniformly with a homo mixer, a colloid mill, a homogenizer or a propeller-type mixer, then dispensing into hot water of at least 50 °C to harden and dry; a method of directly spraying an addition-reaction-hardened, condensation-reaction-hardened or peroxidation-hardened organopolysiloxane composition into a hot air flow to harden; a method of spraying an energy ray-hardened organopolysiloxane composition under high energy irradiation to harden into a powder; or a method of hardening an addition-reaction-hardened, condensation-reaction-hardened, peroxidation-hardened or high-energy-hardened organopolysiloxane composition by high energy irradiation, then pulverizing by means of a publicly known pulverizer such as a ball mill, atomizer, kneader or roller mill. Due to the ability to obtain small spheroidal particles of uniform particle size, it is preferable to use a method of mixing a addition-reaction-hardened,

condensation-reaction-hardened or peroxidation-hardened organopolysiloxane composition as with water in the presence of a surfactant such as a non-ionic surfactant, an anionic surfactant, a cationic surfactant or an amphoteric surfactant, blending uniformly with a homo mixer, a colloid mill, a homogenizer or a propeller-type mixer, then dispensing into hot water of at least 50 °C to harden and dry.

The details concerning this ingredient are described in JP-B H4-66446, JP-A H2-243612 and JP-B H4-17162, and an example of a commercially available product is Trefil E-506C (Toray-Dow Corning Silicone KK). The average particle size of this ingredient must be 1.0-15.0 μm, preferably 1.0-10.0 μm in order to confer to the makeup cosmetic composition of the present invention a silky or soft sensation, and to result in a healthy-looking, natural hue. At less than 1.0 μm, the silkiness is lost, and at more than 15.0 μm, there is a sense of grittiness.

In the present invention, the content of the organopolysiloxane elastomer spheroidal powder is, 1.0-30.0 wt%, preferably 2.0-20.0 wt%. If the content is less than 1.0 wt%, the effect of improvement of the properties of use is reduced, and if more than 30.0 wt%, the adhesion to the skin is lessened.

The non-porous spheroidal silica used in the present invention is obtained, for example, by a method of feeding a high-purity silicon-based raw material powder to a vertical furnace along with a gas flame, and the dispersing the raw material inside the flame, melting these in the form of individual particles to produce spheroidal particles, these being normally composed of silicic anhydride containing about 1 wt% of water (see JP-A S58-145613). The average particle size is 1.0-15.0 μm, preferably the average particle size is 3.0-15.0 μm. If the average particle size is less than 1.0 μm, the spread is heavy, and if the average particle size is more than 15.0 μm, there is a sense of grittiness.

The content of the non-porous spheroidal silica in the makeup cosmetic composition is 5.0-30.0 wt%, preferably 10.0-25.0 wt%. At less than 5.0 wt%, there is no silkiness, and at more than 30.0 wt%, the fitness is lost.

The makeup cosmetic composition of the present invention may contain powders aside from the above-mentioned organopolysiloxane elastomer spheroidal powder and non-porous spheroidal silica. As such powders, there are the following inorganic pigments and organic pigments.

Inorganic pigments include talc, kaolin, mica, sericite, silica, magnesium silicate, calcium silicate, aluminum silicate, clay mineral powders such as bentonite and montmorillonite, alumina, barium sulfate, dibasic calcium phosphate, calcium carbonate, hydrated iron oxide, hydroxyapatite, titanium oxide, microparticulate titanium oxide of particle size 0.1 μm or less, zirconium oxide, zinc oxide, hydroxyapatite, iron oxide, iron titanate, ocher, mango violet, cobalt violet, chrome hydroxide, chrome oxide, cobalt oxide, titanic acid cobalt, cobalt titanate, Prussian blue, ultramarine blue, titanium oxide-coated mica, titanium oxide-coated talc, and composite pigments of two or more of these types.

Examples of the organic pigment used in the present invention include polyester, methyl methacrylate resin, cellulose, 12 nylon, 6 nylon, copolymers of styrene and acrylic acid,

polypropylene, vinyl chloride, nylon powder, polyethylene powder, benzoguanamine powder, tetrafluoroethylene powder, boron nitride, fish scale flakes, lakes of tar pigment, lakes of natural pigment, and composite pigments of the inorganic pigments and organic pigments.

The inorganic pigment and organic pigment used in the present invention may be treated by a hydrophobicization process. By performing a hydrophobicizing treatment, the cosmetic hold including water resistance, perspiration resistance and sebum resistance can be improved without color separation. Examples of hydrophobicizing agents include organic compounds such as dextran fatty acid ester, metal soaps, silicone compounds and dibenzylidene sorbitol. As the method for hydrophobidzation using these hydrophobicizing agents, it is sufficient to use conventionally known methods. Examples include the powders obtained by the method s described in JP-A S62-205165, JP-B S61-58499, JP-B S56-43264, JP-A S56-16404, JP-A S59-76009, JP-A S60-163973, JP-A S63-113081 and JP-A S63-113082.

The content of the powders overall in the makeup cosmetic composition of the present invention is preferably 30.0-60.0 wt% with respect to the total weight of the makeup cosmetic composition.

In order to obtain the makeup cosmetic composition of the present invention, it can be obtained by homogeneously dispersing and blending a powder containing the organopolysiloxane elastomer spheroidal powder and the porous powder with an oil.

Examples of the oil used here include hydrocarbons such as liquid paraffin, squalane, vaselin, polyisobutylene, microcrystalline wax, isopropyl myristate, myristyl octyl dodecanol, di-(2-ethylhexyl) succinate, neopentyl glycol di-iso-octanoate, glycerin monostearate, isostearic acid triglyceride, coconut oil fatty acid triglyceride, castor oil, ethanol, octyl dodecanol, hexadecyl alcohol, octyl alcohol, oleyl alcohol, stearyl alcohol, polyethylene glycol, lauric acid, palmitic acid, oleic acid, stearic acid, isostearic acid, lanolin, bees wax and olive oil, esters, glycerides, lower alcohols, higher alcohols, polyhydric alcohols, higher fatty acids, or organopolysiloxane fluids. The content of these oils in the makeup cosmetic composition of the present invention is 40.0-70.0 wt%, preferably 45.0-65.0 wt%. At less than 40.0 wt%, the spread is heavy and at more than 70.0 wt%, there is a sense of stickiness.

In order to obtain the makeup cosmetic composition of the present invention, it is possible to uniformly disperse and blend a powder containing the organopolysiloxane elastomer spheroidal powder and the non-porous spheroidal silica and the oil.

The makeup cosmetic composition of the present invention can further contain water, surfactants, thickeners, preservatives or fragrances as needed. The makeup cosmetic composition of the present invention can, for example be used as a foundation, blush, eyeshadow or white powder.

EXAMPLES

Next, examples of the present invention shall be described. In the examples, the content is given in wt%.

Example 1 Eyeshadow

(1)	Trefil E-506C	10.0 wt%
(2)	Non-porous spheroidal silica (avg. part. size 5 μm)	10.0
(3)	Mica-coated titanium dioxide	17.5
(4)	Red No. 202	1.5
(5)	Ultramarine blue	1.0
(6)	Ceresin	8.0
(7)	Carnauba wax	1.0
(8)	Isosteric acid triglyceride	43.9
(9)	Dimethylpolysiloxane	10.0
(10)	Fragrance	0.1

[Preparation Method] (6), (7), (8) and (9) were mixed at 85 °C, and this was added to the well-mixed and pulverized (1), (2), (3), (4) and (5) while stirring. Next, the result was grind-homogenized in a colloid mill. (10) was added, and after dearation, the result poured into a container at 70 °C and cooled.

Example 2 Blush

(1)	Trefil E-506C	10.0 wt%
(2)	Non-porous spheroidal silica (avg. part. size 5 μm)	20.0
(3)	Mica	11.0
(4)	Titanium dioxide	8.0
(5)	Red no. 226	1.0
(6)	Ceresin	4.0
(7)	Candelilla wax	0.5
(8)	Squalane	35.4
(9)	Dimethylpolysiloxane	15.0
(10)	Fragrance	0.1

[Preparation Method] The various ingredients were mixed together in the same manner as in Example 1 to obtain a blush.

Example 3 Foundation

(1)	Trefil E-506C	5.0 wt%
(2)	Non-porous spheroidal silica (avg. part. size 10 μm)	20.0
(3)	Kaolin	bal
(4)	Sericite	5.0
(5)	Titanium dioxide	10.0
(6)	Silicone-treated red iron oxide	1.5
(7)	Silicone-treated yellow iron oxide	4.0
(8)	Silicone-treated black iron oxide	0.3
(9)	Aristo wax	4.0
(10)	Carnauba wax	1.3
(11)	Squalane	33.0
(12)	Dimethylpolysiloxane	10.0
(13)	Sorbitan sesquioleate	1.0

(14)	Fragrance	sa

[Preparation Method] The various ingredients were mixed together in the same manner as in Example 1 to obtain a foundation.

Example 4 Foundation

(1)	Trefil E-506C	20.0	wt%
(2)	Non-porous spheroidal silica (avg. part. size 10 μm)	10.0	
(3)	Kaolin	bal	
(4)	Sericite	2.0	
(5)	Titanium dioxide	10.0	
(6)	Silicone-treated red iron oxide	1.5	
(7)	Silicone-treated yellow iron oxide	4.0	
(8)	Silicone-treated black iron oxide	0.3	
(9)	Aristo wax	4.0	
(10)	Carnauba wax	1.3	
(11)	Squalane	33.0	
(12)	Dimethylpolysiloxane	10.0	
(13)	Sorbitan sesquioleate	1.0	
(14)	Fragrance	sa	

[Preparation Method] The various ingredients were mixed together in the same manner as in Example 1 to obtain a foundation.

Example 5 Foundation

(1)	Trefil E-506C	2.0	wt%
(2)	Non-porous spheroidal silica (avg. part. size 10 μm)	25.0	
(3)	Kaolin	bal	
(4)	Sericite	2.0	
(5)	Titanium dioxide	10.0	
(6)	Silicone-treated red iron oxide	1.5	
(7)	Silicone-treated yellow iron oxide	4.0	
(8)	Silicone-treated black iron oxide	0.3	
(9)	Aristo wax	4.0	
(10)	Carnauba wax	1.3	
(11)	Squalane	33.0	
(12)	Dimethylpolysiloxane	10.0	
(13)	Sorbitan sesquioleate	1.0	
(14)	Fragrance	sa	

[Preparation Method] The various ingredients were mixed together in the same manner as in Example 1 to obtain a foundation.

Example 6 Foundation

(1)	Trefil E-506C	35.0	wt%
(2)	Non-porous spheroidal silica (avg. part. size 10 μm)	1.0	
(3)	Kaolin	bal	
(4)	Sericite	5.0	
(5)	Titanium dioxide	10.0	
(6)	Silicone-treated red iron oxide	1.5	
(7)	Silicone-treated yellow iron oxide	4.0	
(8)	Silicone-treated black iron oxide	0.3	
(9)	Aristo wax	4.0	
(10)	Carnauba wax	1.3	
(11)	Squalane	25.0	
(12)	Dimethylpolysiloxane	5.0	
(13)	Sorbitan sesquioleate	1.0	
(14)	Fragrance	sa	

[Preparation Method] The various ingredients were mixed together in the same manner as in Example 1 to obtain a foundation.

Example 7 Foundation

(1)	Trefil E-506C	0.5	wt%
(2)	Non-porous spheroidal silica (avg. part. size 10 μm)	35.0	
(3)	Kaolin	bal	
(4)	Sericite	1.0	
(5)	Titanium dioxide	10.0	
(6)	Silicone-treated red iron oxide	1.5	
(7)	Silicone-treated yellow iron oxide	4.0	
(8)	Silicone-treated black iron oxide	0.3	
(9)	Aristo wax	4.0	
(10)	Carnauba wax	1.3	
(11)	Squalane	30.0	
(12)	Dimethylpolysiloxane	10.0	
(13)	Sorbitan sesquioleate	1.0	
(14)	Fragrance	sa	

[Preparation Method] The various ingredients were mixed together in the same manner as in Example 1 to obtain a foundation.

Comparative Example 1 Foundation

(1)	Trefil E-506C	5.0	wt%
(2)	Kaolin	bal	
(3)	Sericite	5.0	
(4)	Titanium dioxide	10.0	
(5)	Silicone-treated red iron oxide	1.5	
(6)	Silicone-treated yellow iron oxide	4.0	
(7)	Silicone-treated black iron oxide	0.3	
(8)	Aristo wax	4.0	
(9)	Carnauba wax	1.3	
(10)	Squalane	33.0	
(11)	Dimethylpolysiloxane	10.0	

(12)	Sorbitan sesquioleate	1.0
(13)	Fragrance	sa

[Preparation Method] The various ingredients were mixed together in the same manner as in Example 1 to obtain a foundation.

Comparative Example 2 Foundation

(1)	Non-porous spheroidal silica (avg. part. size 10 μm)	20.0 wt%
(2)	Kaolin	bal
(3)	Sericite	5.0
(4)	Titanium dioxide	10.0
(5)	Silicone-treated red iron oxide	1.5
(6)	Silicone-treated yellow iron oxide	4.0
(7)	Silicone-treated black iron oxide	0.3
(8)	Ariste wax	4.0
(9)	Carnauba wax	1.3
(10)	Squalane	33.0
(11)	Dimethylpolysiloxane	10.0
(12)	Sorbitan sesquioleate	1.0
(13)	Fragrance	sa

[Preparation Method] The various ingredients were mixed together in the same manner as in Example 1 to obtain a foundation.

Next, the cosmetic compositions obtained in Examples 1-7 and Comparative Examples 1 and 2 were evaluated for (1) dryness, (2) smoothness, (3) spreadability and (5) cosmetic hold. The evaluation was performed in a five-stage rating as shown in the following Table 1, and their average values were taken to indicate the evaluation results as shown below.

Table 1

CATEGORY	1	2	3	4	5
Dryness	none	little	normal	some	very
Smoothness	none	little	normal	some	very
Spreadability	heavy	slightly heavy	normal	slightly light	light
Cosmetic hold	good	somewhat good	normal	somewhat bad	bad

Indication of Evaluation Results:

O: 4.5 and above
Δ: at least 3.0, less than 4.5
×: at least 1.5, less than 3.0
××: less than 1.5

The results of the above evaluation are shown in Table 2.

Table 2

SAMPLE	DRYNESS	SMOOTHNESS	SPREADABILITY	HOLD
Example 1	O	O	O	O
Example 2	O	O	O	O
Example 3	O	O	O	O
Example 4	O	O	O	O
Example 5	O	O	O	O
Example 6	Δ	O	Δ	Δ
Example 7	Δ	Δ	O	Δ
Comparative Example 1	×	Δ	×	O
Comparative Example 2	O	××	Δ	×

EFFECTS OF THE INVENTION

As described above, the makeup cosmetic composition of the present invention has a high oil content, so that there is no clouding of powder, and no worry that the container or clothes will be soiled. Additionally, when rubbed into the skin, there is no oiliness or stickiness, thus having no problems with regard to clumping over time.